Jon Pompa

Water, Energy, and Waste:

Integrating Themes of Sustainability

Course Instructor: Shakira Castronovo

Final Lesson Plan 2012, Waste

Recycling Paper

Adapted from a lesson of The ThinkGreen.com Website

Buried Treasure, Lesson 2C

Grade: 3rd

Time: Two day lesson, completing the first part of the activity on day 1, then leaving the work overnight and coming in the next day to check, record, and write about the results. Total of forty-five minutes each day for two days (approximately 2 periods).

Student Objectives:

Students will learn the recycling process and will make their own recycled paper.  
Students will learn the benefits of paper recycling.

Students will write about and describe the process of recycling paper, and how it relates to helping the environment.

Teacher Objectives:

The teacher’s objective is to maintain student engagement through discussion, hands on activities, art work, writing, and whole class sharing. For the art work and writing assignments, students are given options including the materials they use as well as the topic and points of view of each of their written paragraphs. During the whole class sharing, students will have the choice of which of their paragraphs they would like to present to the class.

Standards:

Standard 6, Systems Thinking: Students will observe and describe components of simple systems.

Standard 6, Key Idea 5, Patterns of Change: Students will identify patterns of change necessary for making predictions about future behavior and conditions.

NYC Scope and Sequence:

Students will manipulate materials through teacher direction and free discovery. (Process Skills, Standard 4)

Order and sequence objects and/or events. (Process Skills, Standard 9)

Observe, identify, and communicate cause-and-effect relationships.

(Process Skills, Standard 15)

Generate appropriate questions (teacher- and student-based) in response to observations, events, and other experiences. (Process Skills, Standard 16)

Danielson’s Framework:

Competency 1e: Designing coherent instruction

Competency 3b: Using questioning and discussion techniques

Competency 3c: Engaging students in learning

Teacher competencies: Students will be engaged in discussion, debate, answering “what if?” questions, discovering patterns, and the like. They may be selecting their work from a range of teacher assigned choices. Following the lesson, students will reflect on what they have done and what they have learned.

Materials:

Mixed papers from the school recycling bin

Water

Blender

Metal screens

Plastic containers slightly larger than metal screen Newspaper to cover tables

Soap and water for cleanup

Plastic ruler or straight edge

Crayons

Colored Construction paper

Glitter

Glue

Part 1:

Whole class discussion of how paper gets recycled and why. Teacher leads students through the discussion and the class puts together a diagram to show the process. This should be represented as a circle on the board with different steps in the process coming at different points of the circle. The circle should show the way that paper goes out to consumers, gets recycled, gets turned back into usable paper, and then goes out to consumers again. The discussion should also include why trees are important and how they give us oxygen.

Statistics to bring up in the discussion:

The U.S. uses 25% of the world’s paper products.

The U.S. uses approximately 68 million trees each year.

Statistics Source: American Forest and Paper Association

(Discussion Time: 10 Minutes)

Part 2: Activity

1. Tell students that today they will explore how manufacturers turn old paper into new paper.

2. Protect tables by having students cover them with newspapers.

3. Allow students to tear up paper from the recycling bin into little bits

4. Put the paper in a blender.

5. Add just enough water to soak the paper thoroughly.

6. Place the lid on the blender and blend on medium speed. Add water as needed.

7. Be sure each screen is positioned over newspaper or a large plastic container to catch any excess water. Pour the pulpy mixture over each group’s screen. Students should work together to smooth out the mixture over the screen. Using the edge of a plastic ruler or straight edge to smooth out the mixture may reduce the mess.

8. Leave the pulpy mixture to dry overnight.

(Activity Time: 20 Minutes)

SECOND DAY OF LESSON

Part 3: Partner Work, Diagram

Students work with a partner to make their own diagram showing the recycling process. This diagram should look like a circle, and be in the same style as the whole class diagram from the start of the lesson. It should show the different steps the students did in the activity to start with paper and end with paper. The students should use crayons, colored construction paper, glitter, and glue. They should label each of the steps.

(Time: 20 Minutes)

Part 4: Independent Work, Writing

Students write a two paragraph paper about the recycling process. The first paragraph should be about the different steps that go into recycling. The student may write this paper from their own perspective about what they did, or else they may apply it to the world and what people can do and then what happens as a result.

The second paragraph should be about why recycling paper is important. It should show if the students understand what recycling is all about and why we do it. This paragraph should mention the environment, waste, and trees.

Student option: Students may choose to write the paper from the point of view of a tree, pretending that they are the tree and urging people to recycle paper. Students will have the option to write one paragraph, both paragraphs, or none from this perspective.

(Time: 15 Minutes)

Part 5: Whole Class Sharing and Reflection

Students will share and reflect on their writing assignment. Each student chooses exactly one of their two paragraphs to share with the class. After sharing, the teacher asks students to reflect on how the lesson went, what they learned, and how they might improve their answers and work in the future.

(Time: 15 Minutes)

Grouping of students: During the group work activity of recycling paper, students will be grouped heterogeneously with the stronger academic students mixed into different groups. For the partner work art assignment, stronger students will be paired up with weaker ones. The teacher will determine the groups.

Differentiation in this lesson based on Bloom’s Taxonomy: Some students will be given construction paper with the outline of the circle already created for them. They will be able to trace over this themselves, with crayons. Other students will be given paper with not only the circle outline already drawn for them, but also blank lines drawn under the different parts where they should be writing the steps of the recycling process. This will aid in the understanding of students who have a difficult time with verbal directions. Teacher will also walk around the classroom, monitoring each group to make sure they stay on task.

**Rubric**

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| --- | --- | --- | --- | --- |
| Skill | 4 | 3 | 2 | 1 |
| Writing | Student was able to clearly explain, in writing, the process of recycling paper as well as the benefits of this on the environment. | Writing shows that the student understood the main idea of the assignment, but did not clearly explain what he or she did, or how paper is recycled. | Student shows understanding of the process of recycling paper, but only completed one paragraph of the written assignment. | Writing shows that the student did not understand the process of recycling paper or the reasons for it’s importance to the environment. |
| Group Work | Student completed the activity in groups and participated in the activity with peers. | Student completed activity with minimal teacher assistance. | Student required moderate teacher assistance and prompting to complete the activity. | Student required a great deal of teacher assistance and prompting to complete the activity. |
| Engagement | Student participated in the class discussions or showed engagement at both the start of the lesson, as well as the whole class sharing and reflection at the end. | Student was not engaged or did not participate at the start of the lesson, but did show engagement or participate in the whole class sharing and reflection end of the lesson. | Student was not engaged during the lesson and needed reminders to stay on task during the activities. Student did participate in the whole class sharing and reflection. | Student did not show engagement during the lesson and needed constant reminders by the teacher to stay on task. Student did not participate at the start or the end of the lesson. |